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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/077,927	02/20/2002	Hiroaki Nakaminami	1248-0578P-SP	6989

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BIRCH STEWART KOLASCH & BIRCH
PO BOX 747
FALLS CHURCH, VA 22040-0747

EXAMINER

CHOWDHURY, TARIFUR RASHID

ART UNIT PAPER NUMBER

2871

DATE MAILED: 04/01/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/077,927

Applicant(s)

NAKAMINAMI ET AL.

Examiner

Tarifur R Chowdhury

Art Unit

2871

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 06 January 2004.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-9 and 11-18 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-9 and 11-18 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 20 February 2002 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 112

1. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

2. Claims 1-9 and 11-16 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

In claims 1, 11 and 12, applicant recites, "the insulating protective layer is extended inside the display panel only through two sides in a width direction of the flexible wire board". However, it is not clear as to what applicant means by "only through two sides in a width direction". Therefore, the claim is vague and indefinite. For examination purposes, the examiner has interpreted the limitation as the protective layer being extended inside the display panel through both sides of the edge of said display panel in a width direction of the flexible wire board per Figs. 1, 2, 3 and 5 of the instant application.

Claim Rejections - 35 USC § 102

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

4. **Claim 18 is rejected under 35 U.S.C. 102(b) as being anticipated by Fujita, USPAT 6,172,730.**

Art Unit: 2871

5. Fujita discloses and shows in Fig. 3D, a display module, which includes a display panel (2) provided with external connection terminals and a flexible wire board (3) having a wire pattern (3a) on a base material (3), terminals of the wire pattern of the flexible wire board and the external connection terminals of the display panel being bonded using an anisotropic conductive adhesive (4), the flexible wire board having an insulating protective layer (3b) for protecting the wire pattern, wherein:

at least a part of an end portion of the insulating protective layer (3b) of the flexible wire board is extended inside the display panel while having the flexible wire board connected to the display panel, the end portion being that of an external connection terminal side.

Accordingly, claim 18 is anticipated.

Claim Rejections - 35 USC § 103

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

7. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to

Art Unit: 2871

consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

8. Claim 17 is rejected under 35 U.S.C. 102(b) as being anticipated by Fujita, USPAT 6,172,730 in view of applicant's admitted prior art (AAPA).

9. Fujita discloses and shows in Fig. 3D, a display module, which includes a display panel (2) provided with external connection terminals and a flexible wire board (3) having a wire pattern (3a) on a base material (3), terminals of the wire pattern of the flexible wire board and the external connection terminals of the display panel being bonded using an anisotropic conductive adhesive (4), the flexible wire board having an insulating protective layer (3b) for protecting the wire pattern, wherein:

the insulating protective layer (3b) of the flexible wire board is extended inside the display panel while having the flexible wire board connected to the display panel.

Fujita differs from the claimed invention because he does not explicitly disclose that the flexible wire board is a COF.

The AAPA described in the instant application discloses (page 5, lines 11-15) that flexible wire board subject to COF mounting has higher flexibility than that of the flexible wire board subject to TCT mounting.

The AAPA is evidence that ordinary workers in the art would find a reason, suggestion or motivation to use flexible wire board subject to COF mounting.

Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention was made to use a flexible wire board that is subject to COF mounting in Fujita so that higher flexibility is obtained, as per the teachings of the AAPA.

Accordingly, claim 17 would have been obvious.

10. Claims 1-9 and 11-16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Nakamura, USPAT 6,211,936 in view of Fujita, USPAT 6,172,730.

11. Nakamura discloses (col. 1, line 58 – col. 2, line 22) and shows in Fig. 3, a display module, which includes a display panel (16) provided with external connection terminals and a flexible wire board (5) having a wire pattern (3) on a base material (1),

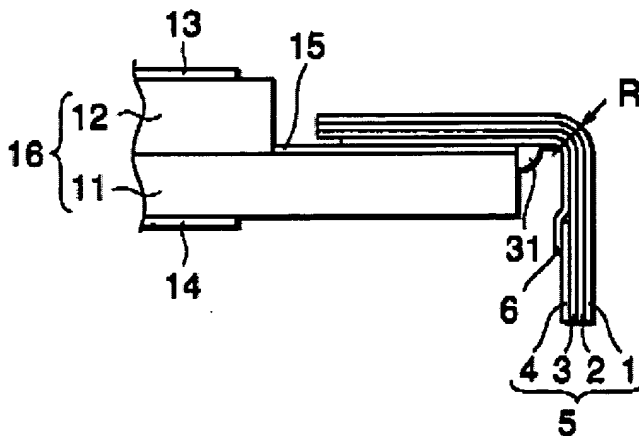


FIG. 3

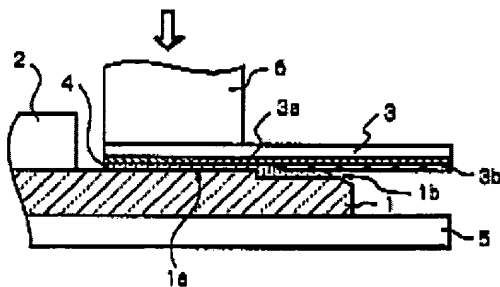
terminals of the wire pattern of the flexible wire board and the external connection terminals of the display panel being bonded using an anisotropic conductive adhesive (6), the flexible wire board (5) having an insulating protective layer (4) for protecting the wire pattern.

Nakamura only shows that the protective layer is extended through one side of the edge of the display panel in a width direction of the flexible wire board but differs from the claimed invention because he does not explicitly disclose that the insulating

protective layer of the flexible wire board is extended inside the display panel through both sides of the edge of the display panels in a width direction of the flexible wire board.

Fujita discloses a display module which includes a display panel (2) and a flexible wire board (3) having a wire pattern (3a) and an insulating protecting layer (3b) for protecting the wire pattern wherein the insulating protective layer extends inside the display panel (Fig. 3D). Fujita also discloses that since the insulating protecting layer extends inside the display panel and thus protect the leads of the flexible wire board from being exposed to outside, any short-circuiting can be reliably prevented from occurring to the leads due to the foreign objects adhering thereto (col. 3, lines 20-30; col. 4, lines 6-11; col. 5, lines 59-63).

Fig. 3D



Fujita is evidence that ordinary workers in the art would find a reason, suggestion or motivation to extend the insulating protective layer inside the display panel.

Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention was made to modify the display module of Nakamura by extending the insulating protective layer of the flexible wire board inside the display panel so that

Art Unit: 2871

the protective layer is extended through both sides of the edge of the display panel in a width direction of the flexible wire board for advantages such as protecting the lead of the flexible wire board from being exposed to the outside and thus reliably preventing any short-circuiting from occurring to the leads due to the foreign objects adhering thereto, as per the teachings of Fujita.

Accordingly, claims 1, 2, 11 and 12 would have been obvious.

As to claims 3, 4 and 13-16, Nakamura clearly shows in Fig. 3 that the anisotropic conductive adhesive (6) is extended to protrude from the display panel (16). Nakamura also discloses that the base film (1) of the flexible wire board has a thickness of 25 μm (not more than 40, and the insulating protective layer (4) has a thickness of 25 μm (not more than 40 μm), and the insulating protective layer is bonded onto the base material including the wire pattern (3) by thermocompression bonding (col. 4, lines 29-37; 52-54).

As to claims 5 and 6, Nakamura also shows in Fig. 3 that a corner of the display panel (16), which faces an inner side of a bent portion of the flexible wire board (5) in a bent state, is formed into a chamfered portion. Further, as explained above since Fujita teaches that extending the insulating protective layer of the flexible wire board inside the display panel is advantageous since it prevents any short-circuiting from occurring to the leads due to the foreign objects adhering thereto and that the chamfered portion is formed at the periphery of the substrate of the display panel, it would have at least been obvious that the insulating protective layer of the flexible wire board is extended beyond the chamfered portion.

As to claims 7-9, Nakamura also shows in Fig. 3 that the flexible wire board (5) is also bonded onto the chamfered portion and a side of the display panel by using anisotropic conductive adhesive (31).

Response to Arguments

12. Applicant's arguments with respect to claims 1-9 and 11-18 have been considered but are moot in view of the new ground(s) of rejection.

Conclusion

13. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

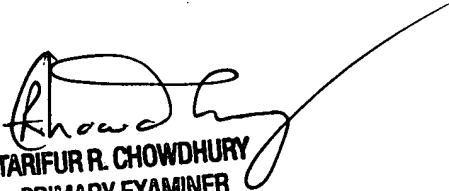
Any inquiry concerning this communication or earlier communications from the examiner should be directed to Tarifur R Chowdhury whose telephone number is (571) 272-2287. The examiner can normally be reached on M-Th (6:30-5:00) Friday Off.

Art Unit: 2871

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Robert Kim can be reached on (571) 272-2293. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

TRC
March 25, 2004



TARIFUR R. CHOWDHURY
PRIMARY EXAMINER